

Sub B1
cont.

3. (Amended) Ultraphobic surface according to Claim 1, wherein said structured surface has a contact angle of at least 150° and a roll-off angle of $<10^\circ$.

4. (Amended) Ultraphobic surface according to Claim 1, wherein said structured surface has a contact angle of at least 155° .

5. (Amended) Ultraphobic surface according to Claim 1, wherein said structured surface consists of metal or plastic.

6. (Amended) Ultraphobic surface according to Claim 5, wherein the metal is selected from the group consisting of beryllium, magnesium, scandium, titanium, vanadium, chromium, manganese, iron, cobalt, nickel, copper, zinc, aluminum, gallium, yttrium, zirconium, niobium, molybdenum, technetium, ruthenium, rhenium, palladium, silver, cadmium, indium, tin, lanthanum, cerium, praseodymium, neodymium, samarium, europium, gadolinium, terbium, dysprosium, holmium, erbium, thulium, ytterbium, lutetium, hafnium, tantalum, tungsten, rhenium, osmium, iridium, platinum, gold, thallium, lead, bismuth, titanium, aluminium, magnesium, nickel and an alloy of said metals.

7. (Amended) Ultraphobic surface according to Claim 5, wherein the metal is an aluminium-magnesium alloy, in particular $AlMg_3$.

8. (Amended) Ultraphobic surface according to Claim 5, wherein the plastic is a thermosetting or thermoplastic polymer.

9. (Amended) Ultraphobic surface according to Claim 8, wherein the thermosetting polymer is selected from the group consisting of diallyl phthalate resin, epoxy resin, urea-formaldehyde resin, melamine-formaldehyde resin, melamine-phenol-formaldehyde resin, phenol-formaldehyde resin, polyimide, silicone rubber, unsaturated polyester resin and mixtures of said polymers.

10. (Amended) Ultraphobic surface according to Claim 1, wherein the surface has a

Sub B1
cont.

coating with a hydrophobic phobicization auxiliary.

11. (Amended) Material or construction material comprising an ultraphobic surface according to Claim 1.

12. (Amended) A friction-reducing lining of vehicle bodies, aircraft fuselages or hulls of ships comprising the ultraphobic surface as claimed in claim 1.

13. (Amended) A self-cleaning coating or panelling of building structures, roofs, windows, ceramic construction material comprising the ultraphobic surface claimed in Claim 1.

14. (Amended) An antirust coating of metal objects comprising the ultraphobic surface claimed in Claim 1.

15. (Amended) A transparent sheet or a topcoat of transparent sheets comprising the ultraphobic surface claimed in Claim 1.

16. (Amended) Process for the preparation of a surface having ultraphobic properties according to claim 1 based on an AlMg₃ alloy, comprising cleaning, pickling, anodically oxidating, passivating in boiling water, and optionally coating with a noble metal as an adhesion promoter, and coating with a hydrophobic material.

17. (Amended) Process for the preparation of a surface having ultraphobic properties comprising molding, wherein a mould, which has the negative of a surface topography suitable for an ultraphobic surface, is moulded with a mixture of a plastic and a hydrophobic additive, which separates out upon curing as a thin film between the surface of the mould and the plastic moulding.

18. (Amended) Process for the preparation of a surface having ultraphobic properties comprising moulding a surface of a positive mould, which has a surface structure suitable for an ultraphobic surface, with a plastic, and the surface of the resulting moulding having the

negative impression of the surface of the positive mould is optionally provided with an adhesion promoter layer and then with a hydrophobic coating.

19. (Amended) Process according to Claim 18, wherein the plastic is a hydrophobic polymer, and the additional coating with hydrophobic or oleophobic material is optionally omitted.

20. (Amended) Process according to Claim 17, wherein the mould is the negative of the surface structure of a pickled, anodized surface consisting essentially of aluminium or an aluminium alloy and treated with hot water at from 50 to 100°C.

21. (Amended) Process according to Claim 17, wherein the mould is the negative of the surface structure of a microstructured, anodized, calcined surface consisting essentially of aluminum or an aluminium alloy.

22. (Amended) Process according to Claim 17, wherein the plastic used for the moulding is a thermosetting polymer or a thermoplastic polymer.

23. (Amended) Process according to Claim 22, wherein the thermosetting polymer is selected from the group consisting of diallyl phthalate resin, epoxy resin, urea-formaldehyde resin, melamine-formaldehyde resin, melamine-phenol-formaldehyde resin, phenol-formaldehyde resin, polyimide, silicone rubber and unsaturated polyester resin.

24. (Amended) Process according to Claim 22, wherein the thermoplastic polymer is selected from the group consisting of thermoplastic polyolefin, polypropylene, polyethylene, polycarbonate, polyester carbonate, polyester, PBT, PET, polystyrene, styrene copolymer, SAN resin, rubber-containing styrene graft copolymer, ABS polymer, polyamide, polyurethane, polyphenylene sulphide, polyvinyl chloride and mixtures of said polymers.

25. (Amended) Process according to Claim 17, wherein the surface of the moulding with the impression has a coating with a hydrophobic phobicization auxiliary, or

phobicization auxiliary which hydrophobicizes the surface, used as additive to polymers compatible therewith.

26. (Amended) A method of testing a surface for ultraphobic properties, comprising coating the surface with a noble metal or GaAs as adhesion promoter, further coating with a phobicization auxiliary, then analyzing the surface topography and, from the measured data, the spatial frequencies f and their structure amplitudes $a(f)$, and the integral of the function S

$$S(\log F)=a(f) \cdot f \quad (1)$$

calculated between the integration limits $\log(f_1/\mu\text{m}^{-1})=-3$ and $\log(f_2/\mu\text{m}^{-1})=3$ is formed.

Please add the following new claims:

Sub 27. (New) Ultraphobic surface according to Claim 8, wherein the thermoplastic polymer is selected from the group consisting of polypropylene, polyethylene, polycarbonate, polyester carbonate, polyester, PBT, PET, polystyrene, styrene copolymer, SAN resin, rubber-containing styrene graft copolymer, ABS polymer, polyamide, polyurethane, polyphenylene sulphide, polyvinyl chloride and mixtures of said polymers.

28. (New) The ultraphobic surface of claim 10 wherein the hydrophobic phobicization auxiliary is an anionic, cationic, amphoteric or nonionic, interface active group.

29. (New) The self-cleaning coating or panelling of building structures, roofs, windows, ceramic construction material claimed in Claim 13 for sanitary installations and household appliances.

30. (New) The transparent sheet of Claim 15 used as a sheet or top-coating in glass or plastic.

31. (New) The transparent sheet of Claim 15 used as a sheet or top-coating for solar cells, vehicles, or greenhouses.

32. (New) The process of Claim 16, wherein the noble metal coating is gold with a

layer thickness of from 10 to 100 nm.

33. (New) The process of Claim 32, wherein the coating is prepared by atomization.

34. (New) The process of Claim 16, wherein the hydrophobic material is a phobicization auxiliary selected from the group consisting of anionic, cationic, amphoteric, and nonionic interface active compounds.

35. (New) The process claimed in Claim 17, wherein the hydrophobic additive is oleophobic.

36. (New) The process as claimed in Claim 18, wherein the plastic is a thermosetting or thermoplastic polymer.

37. (New) The process as claimed in Claim 18, wherein the hydrophobic coating is oleophobic.

38. (New) The process as claimed in Claim 19, wherein the hydrophobic polymer is poly(methyl)methacrylate-co-perfluorooctadecyl methacrylate.

39. (New) Process according to Claim 18, wherein the mould is the positive of the surface structure of a pickled, anodized surface consisting essentially of aluminium or an aluminium alloy and treated with hot water at from 50 to 100°C.

40. (New) Process according to Claim 18, wherein the mould is the positive of the surface structure of a microstructured, anodized, calcined surface consisting essentially of aluminum or an aluminium alloy.

41. (New) Process according to Claim 18, wherein the plastic used for the moulding is a thermosetting polymer or a thermoplastic polymer.

42. (New) Process according to Claim 41, wherein the thermosetting polymer is selected from the group consisting of diallyl phthalate resin, epoxy resin, urea-formaldehyde resin, melamine-formaldehyde resin, melamine-phenol-formaldehyde resin, phenol-

formaldehyde resin, polyimide, silicone rubber and unsaturated polyester resin.

43. (New) Process according to Claim 41, wherein the thermoplastic polymer is selected from the group consisting of thermoplastic polyolefin, polypropylene, polyethylene, polycarbonate, polyester carbonate, polyester, PBT, PET, polystyrene, styrene copolymer, SAN resin, rubber-containing styrene graft copolymer, ABS polymer, polyamide, polyurethane, polyphenylene sulphide, polyvinyl chloride and mixtures of said polymers.

44. (New) Process according to Claim 18, wherein the surface of the moulding with the impression has a coating with a hydrophobic phobicization auxiliary, or phobicization auxiliary which hydrophobicizes the surface, used as additive to polymers compatible therewith.

45. (New) The process according to Claim 17, wherein the hydrophobic auxiliary is an anionic, cationic, amphoteric, or nonionic interface active compound.

46. (New) The process according to Claim 18, wherein the hydrophobic auxiliary is an anionic, cationic, amphoteric, or nonionic interface active compound.

47. (New) The method claimed in Claim 26, wherein said surface is coated by vapor deposition.

48. (New) The method claimed in Claim 26, wherein the adhesion promoter is gold.

49. (New) The method claimed in Claim 48, wherein the gold layer has a thickness of 10 to 100 nm.

50. (New) The method claimed in claim 26 wherein the phobicization auxiliary is decanethiol.

51. (New) The method claimed in Claim 26, wherein the surface topography is analyzed with a combination of scanning tunneling microscopy, scanning atomic force microscopy, and/or white light interferometry.